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decay heat power in
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an American National Standard

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NUCLEAR REGULATORY COMMISSION

Docket No. 50-413/414-OLA Official Exh. No. 45

In the matter of Duke Catawba

Staff ✓ IDENTIFIED 7/14/04

Applicant RECEIVED 7/14/04

Intervenor REJECTED

Cont'g Off'r

Contractor DATE

Other Witness

Reporter Robin Allen

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American National Standard for Decay Heat Power in Light Water Reactors

Secretariat
American Nuclear Society

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Table 5. Tabular data for standard decay heat power for thermal fission of ^{235}U following an irradiation of 10^{13} seconds

Time after shutdown t(s)	Decay heat power F(t,∞) (MeV/fission)[a]	One sigma uncertainty ΔF(t,∞) (MeV/fission)	One sigma uncertainty (percent)
1.0E+00	1.238E+01[b]	0.035E+01	2.8
1.5E+00	1.201E+01	0.030E+01	2.5
2.0E+00	1.170E+01	0.028E+01	2.4
4.0E+00	1.084E+01	0.024E+01	2.2
6.0E+00	1.026E+01	0.022E+01	2.1
8.0E+00	9.834E+00	0.197E+00	2.0
1.0E+01	9.497E+00	0.190E+00	2.0
1.5E+01	8.886E+00	0.169E+00	1.9
2.0E+01	8.460E+00	0.161E+00	1.9
4.0E+01	7.463E+00	0.134E+00	1.8
6.0E+01	6.892E+00	0.124E+00	1.8
8.0E+01	6.497E+00	0.117E+00	1.8
1.0E+02	6.202E+00	0.112E+00	1.8
1.5E+02	5.700E+00	0.103E+00	1.8
2.0E+02	5.378E+00	0.097E+00	1.8
4.0E+02	4.671E+00	0.084E+00	1.8
6.0E+02	4.287E+00	0.077E+00	1.8
8.0E+02	4.013E+00	0.072E+00	1.8
1.0E+03	3.799E+00	0.068E+00	1.8
1.5E+03	3.411E+00	0.061E+00	1.8
2.0E+03	3.140E+00	0.057E+00	1.8
4.0E+03	2.538E+00	0.046E+00	1.8
6.0E+03	2.238E+00	0.038E+00	1.7
8.0E+03	2.048E+00	0.035E+00	1.7
1.0E+04	1.912E+00	0.033E+00	1.7
1.5E+04	1.688E+00	0.030E+00	1.8
2.0E+04	1.549E+00	0.028E+00	1.8
4.0E+04	1.262E+00	0.023E+00	1.8
6.0E+04	1.121E+00	0.021E+00	1.9
8.0E+04	1.033E+00	0.021E+00	2.0
1.0E+05	9.729E-01	0.195E-01	2.0
1.5E+05	8.772E-01	0.175E-01	2.0
2.0E+05	8.191E-01	0.164E-01	2.0
4.0E+05	7.012E-01	0.140E-01	2.0
6.0E+05	6.368E-01	0.127E-01	2.0
8.0E+05	5.906E-01	0.118E-01	2.0
1.0E+06	5.547E-01	0.111E-01	2.0
1.5E+06	4.904E-01	0.098E-01	2.0
2.0E+06	4.463E-01	0.089E-01	2.0
4.0E+06	3.494E-01	0.073E-01	2.1
6.0E+06	3.020E-01	0.064E-01	2.1
8.0E+06	2.717E-01	0.057E-01	2.1

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Table 6. Tabular data for standard decay heat power for thermal fission of ^{239}Pu following an irradiation of 10^{13} seconds

Time after shutdown (sec)	Decay heat power F(t,∞) (MeV/fission)[a]	One sigma uncertainty ΔF(t,∞) (MeV/fission)	One sigma uncertainty (percent)
1.0E+00	1.027E+01[b]	0.046E+01	4.5
1.5E+00	1.003E+01	0.042E+01	4.2
2.0E+00	9.822E+00	0.393E+00	4.0
4.0E+00	9.213E+00	0.350E+00	3.8
6.0E+00	8.802E+00	0.326E+00	3.7
8.0E+00	8.494E+00	0.314E+00	3.7
1.0E+01	8.250E+00	0.297E+00	3.6
1.5E+01	7.801E+00	0.281E+00	3.6
2.0E+01	7.483E+00	0.269E+00	3.6
4.0E+01	6.713E+00	0.242E+00	3.6
6.0E+01	6.257E+00	0.225E+00	3.6
8.0E+01	5.935E+00	0.214E+00	3.6
1.0E+02	5.691E+00	0.205E+00	3.6
1.5E+02	5.268E+00	0.190E+00	3.6
2.0E+02	4.988E+00	0.180E+00	3.6
4.0E+02	4.363E+00	0.157E+00	3.6
6.0E+02	3.999E+00	0.148E+00	3.7
8.0E+02	3.733E+00	0.138E+00	3.7
1.0E+03	3.522E+00	0.130E+00	3.7
1.5E+03	3.134E+00	0.119E+00	3.8
2.0E+03	2.864E+00	0.112E+00	3.9
4.0E+03	2.282E+00	0.094E+00	4.1
6.0E+03	2.009E+00	0.084E+00	4.2
8.0E+03	1.845E+00	0.081E+00	4.4
1.0E+04	1.733E+00	0.076E+00	4.4
1.5E+04	1.554E+00	0.071E+00	4.6
2.0E+04	1.443E+00	0.068E+00	4.7
4.0E+04	1.211E+00	0.058E+00	4.8
6.0E+04	1.087E+00	0.053E+00	4.9
8.0E+04	1.006E+00	0.050E+00	5.0
1.0E+05	9.482E-01	0.474E-01	5.0
1.5E+05	8.541E-01	0.427E-01	5.0
2.0E+05	7.951E-01	0.406E-01	5.1
4.0E+05	6.695E-01	0.341E-01	5.1
6.0E+05	6.005E-01	0.306E-01	5.1
8.0E+05	5.523E-01	0.282E-01	5.1
1.0E+06	5.157E-01	0.263E-01	5.1
1.5E+06	4.525E-01	0.231E-01	5.1
2.0E+06	4.107E-01	0.209E-01	5.1
4.0E+06	3.223E-01	0.168E-01	5.2
6.0E+06	2.802E-01	0.146E-01	5.2
8.0E+06	2.537E-01	0.132E-01	5.2

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